

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	4	((SIGRID) near2 (BUHLER)).INV.	US-PGPUB; USPAT	NEAR	ON	2007/03/07 18:30
S2	2	("5763599").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/08/30 14:45
S3	40	((WOLFGANG) near2 (PFLEIDERER)).INV.	US-PGPUB; USPAT	NEAR	ON	2007/03/16 12:50
S4	2	((MARKUS) near2 (OTT)).INV.	US-PGPUB; USPAT	NEAR	ON	2006/08/30 16:44
S5	2	("6750335").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/08/30 17:58
S6	2	("6756492").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/16 15:07
S7	17	ERITJA Ramon	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	NEAR	ON	2006/08/30 18:32
S8	3	("6348458").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/01 17:01
S9	5	((("6348458") or ("5703232"))).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2006/09/01 17:01
S11	0	"5143854"" "5763599"" "6153744"	US-PGPUB; USPAT	NEAR	ON	2007/03/16 12:51
S12	3	("5143854" "5763599" "6153744").PN.	US-PGPUB; USPAT	NEAR	ON	2007/03/16 13:54

EAST Search History

S13	1	"6756492"	US-PGPUB; USPAT	NEAR	ON	2007/03/16 13:55
S14	0	("US2005272076").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/16 15:07
S15	2	("2005272076").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/03/16 15:07
S18	161	(stengele).inv.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	NEAR	ON	2007/03/16 15:08
S19	10	S18 and photolabile	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	NEAR	ON	2007/03/16 15:17
S26	14873	(pan).inv.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	NEAR	ON	2007/03/16 15:20
S27	1168	S26 and protease	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	NEAR	ON	2007/03/16 15:21
S28	29631	(lu).inv.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	NEAR	ON	2007/03/16 15:21
S30	12	S28 and S27	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	NEAR	ON	2007/03/16 15:21

10/764989>16/03/2007

=> d his

(FILE 'HOME' ENTERED AT 14:49:21 ON 16 MAR 2007)

FILE 'REGISTRY' ENTERED AT 14:49:26 ON 16 MAR 2007

L1 STRUCTURE UPLOADED

L2 0 S L1 SSS SAM

FILE 'STNGUIDE' ENTERED AT 14:49:57 ON 16 MAR 2007

FILE 'REGISTRY' ENTERED AT 14:59:50 ON 16 MAR 2007

L3 STRUCTURE UPLOADED

L4 1 S L3 SSS SAM

L5 31 S L3 SSS FULL

FILE 'HCAPLUS' ENTERED AT 15:00:58 ON 16 MAR 2007

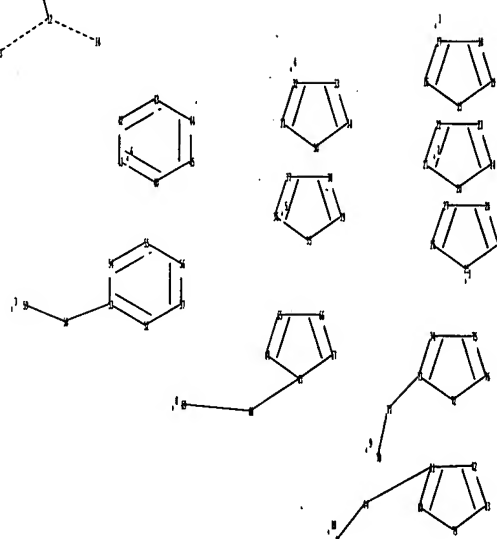
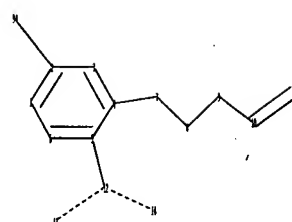
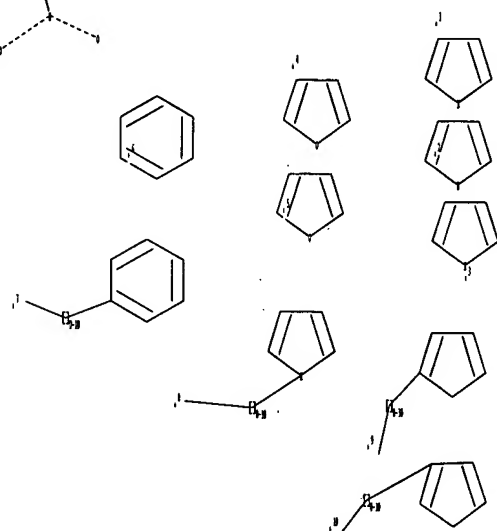
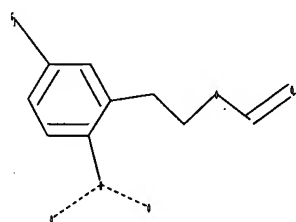
L6 7 S L5

FILE 'STNGUIDE' ENTERED AT 15:01:17 ON 16 MAR 2007

10/764989>16/03/2007

<http://www.cas.org/ONLINE/UG/regprops.html>

=>
Uploading C:\Program Files\Stnexp\Queries\989secondactiii.str



chain nodes :

7 8 9 10 11 12 13 14 58 59 68 69 77 78 84 85 94

ring nodes :

1 2 3 4 5 6 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 52 53 54 55 56 57 63 64
65 66

67 72 73 74 75 76 79 80 81 82 83

chain bonds :

2-94 4-7 5-12 7-8 8-9 9-10 10-11 12-13 12-14 53-58 58-59 63-68 68-69
73-77 77-78 81-84 84-85

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 15-16 15-19 16-17 17-18 18-19 20-21 20-24 21-22
22-23 23-24 25-26 25-29 26-27 27-28 28-29 30-31 30-34 31-32 32-33 33-34 35-36
35-39

10/764989>16/03/2007

36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 52-53 52-57 53-54 54-55
55-56
56-57 63-64 63-67 64-65 65-66 66-67 72-73 72-76 73-74 74-75 75-76 79-80 79-83
80-81
81-82 82-83
exact/norm bonds :
2-94 5-12 8-9 9-10 10-11 12-13 12-14 15-16 15-19 16-17 17-18 18-19 20-21
20-24 21-22 22-23 23-24 25-26 25-29 26-27 27-28 28-29 30-31 30-34 31-32 32-33
33-34
35-36 35-39 36-37 37-38 38-39 63-64 63-67 63-68 64-65 65-66 66-67 72-73 72-76
73-74
74-75 75-76 79-80 79-83 80-81 81-82 82-83
exact bonds :
4-7 7-8 53-58 58-59 68-69 73-77 77-78 81-84 84-85
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 40-41 40-45 41-42 42-43 43-44 44-45 52-53 52-57
53-54 54-55 55-56 56-57

G1:[*1],[*2],[*3],[*4],[*5],[*6],[*7],[*8],[*9],[*10]

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS
11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom
21:Atom
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom 31:Atom
32:Atom
33:Atom 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom 42:Atom
43:Atom
44:Atom 45:Atom 52:Atom 53:Atom 54:Atom 55:Atom 56:Atom 57:Atom 58:CLASS 59:CLASS
63:Atom 64:Atom 65:Atom 66:Atom 67:Atom 68:CLASS 69:CLASS 72:Atom 73:Atom 74:Atom
75:Atom
76:Atom 77:CLASS 78:CLASS 79:Atom 80:Atom 81:Atom 82:Atom 83:Atom 84:CLASS 85:CLASS
94:CLASS

L3 STRUCTURE UPLOADED

=> d l3

L3 HAS NO ANSWERS

L3 STR

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

Structure attributes must be viewed using STN Express query preparation.

=> s l3 sss sam

SAMPLE SEARCH INITIATED 15:00:27 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 161 TO ITERATE

100.0% PROCESSED 161 ITERATIONS

1 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 2459 TO 3981

PROJECTED ANSWERS: 1 TO 80

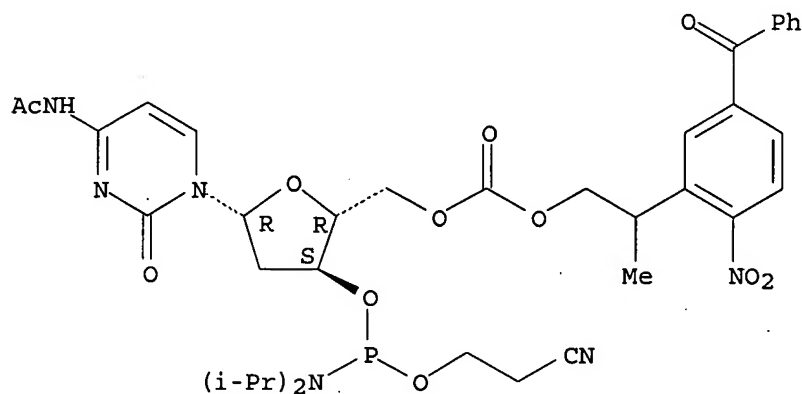
L4 1 SEA SSS SAM L3

10/764989>16/03/2007

=> d scan

L4 1 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
IN Cytidine, N-acetyl-2'-deoxy-, 5'-[2-(5-benzoyl-2-nitrophenyl)propyl
carbonate] 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI)
MF C37 H45 N6 O11 P

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

=> s l3 sss full
FULL SEARCH INITIATED 15:00:52 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 3374 TO ITERATE

100.0% PROCESSED 3374 ITERATIONS 31 ANSWERS
SEARCH TIME: 00.00.01

L5 31 SEA SSS FUL L3

=> fil hcaplus
COST IN U.S. DOLLARS
FULL ESTIMATED COST

	SINCE FILE ENTRY	TOTAL SESSION
	172.55	174.17

FILE 'HCAPLUS' ENTERED AT 15:00:58 ON 16 MAR 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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10/764989>16/03/2007

FILE COVERS 1907 - 16 Mar 2007 VOL 146 ISS 13
FILE LAST UPDATED: 15 Mar 2007 (20070315/ED)

New CAS Information Use Policies, enter HELP.USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate
substance identification.

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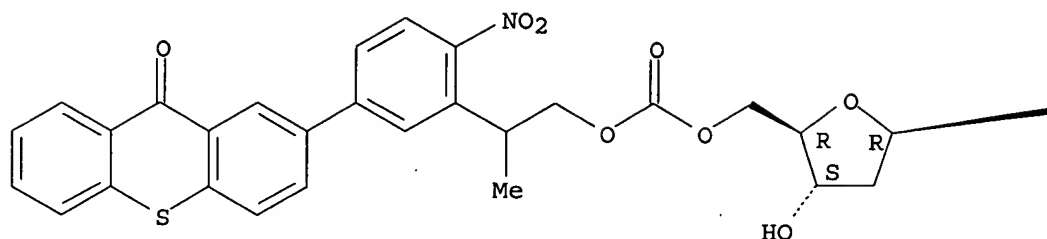
L6 7 L5

=> d 16 ibib abs hitstr 1-7

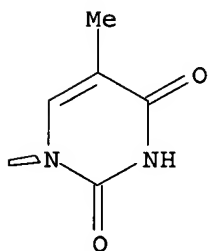
L6 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:483932 HCAPLUS <<LOGINID::20070316>>
DOCUMENT NUMBER: 145:124806
TITLE: Highly efficient photolabile protecting groups with
intramolecular energy transfer
AUTHOR(S): Woell, Dominik; Smirnova, Julia; Pfleiderer, Wolfgang;
Steiner, Ulrich E.
CORPORATE SOURCE: Fachbereich Chemie, Universitaet Konstanz, Konstanz,
78464, Germany
SOURCE: Angewandte Chemie, International Edition (2006),
45(18), 2975-2978
CODEN: ACIEF5; ISSN: 1433-7851
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A series of novel, highly light-sensitive photolabile protecting groups
for light-controlled DNA synthesis has been developed. In these compds.
the NPPOC (nitrophenylpropoxycarbonyl) protecting group is covalently
linked to thioxanthone as an intramol. antenna. The photochem. kinetics
of these compds. under stationary irradiation conditions has been quant.
investigated, and photochem. quantum yields as well as chemical yields of the
photodeprotected substrate were determined for thymidine as a model substrate.
The kinetics of triplet-triplet energy transfer between the antenna mol.
and the photolabile protecting group has been investigated by laser flash
spectroscopy. Besides triplet-triplet energy transfer, a sensitization
mechanism involving the excited sensitizer singlet must be also involved,
particularly in the systems with short linkers. The high light
sensitivity of these protecting groups should allow their use in
photolithog. synthesis of high-d. DNA chips.
IT 777864-78-5
RL: BUU (Biological use, unclassified); CPS (Chemical process); PEP
(Physical, engineering or chemical process); PRP (Properties); BIOL
(Biological study); PROC (Process); USES (Uses)
(highly efficient photolabile protecting groups for applications in
photolithog. synthesis of high-d. DNA chips)
RN 777864-78-5 HCAPLUS
CN Thymidine, 5'-[2-[2-nitro-5-(9-oxo-9H-thioxanthen-2-yl)phenyl]propyl
carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1151413 HCAPLUS <<LOGINID::20070316>>

DOCUMENT NUMBER: 145:397718

TITLE: Recent highlights on photolytic oligonucleotide array in situ synthesis

AUTHOR(S): Stengele, Klaus-Peter; Buehler, Jochen; Buehler, Sigrid; Kvassiouk, Evgueni; Green, Roland; Prykota, Tamara; Pfleiderer, Wolfgang

CORPORATE SOURCE: Chemogenix GmbH, Waldkraiburg, Germany

SOURCE: Nucleosides, Nucleotides & Nucleic Acids (2005), 24(5-7), 891-896

CODEN: NNNAFY; ISSN: 1525-7770

PUBLISHER: Taylor & Francis, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Light directed synthesis of high-d. oligonucleotide micro-arrays is currently performed using either ortho-nitro-benzyl-type [MeNPOC] or ortho-nitrophenyl-ethyl-type [NPPOC] protecting groups as the 5'-O-carbonate ester of the phosphoramidite building block. The synthesis cycle uses a combinatorial approach attaching one specific base per cycle, thus as many as 100 cycles need to be run to make an array of 25-mers. Time needed for deprotection/activation of the growing oligo chain det. overall manufacturing time and consequently also cost. In this report we demonstrate the development of photo-protected phosphoramidite monomers for light directed array synthesis with increasing sensitivity to the UV light used. If combined with mask-less array synthesis, this technol. allows for synthesis of arrays with >780,000 different 25-mer oligonucleotides in about one hour and allows for high flexibility in array design and reiterative redesign. The arrays synthesized show high quality and reproducibility in our standard hybridization based assay.

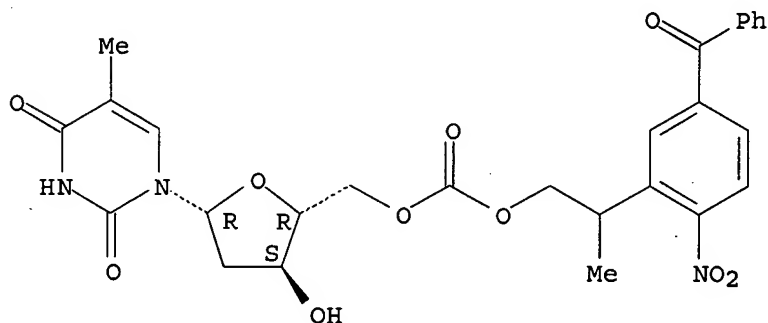
IT 748789-44-8P 868157-71-5P

RL: PNU (Preparation, unclassified); PREP (Preparation)
(recent highlights on photolytic oligonucleotide array in situ
synthesis)

RN 748789-44-8 HCAPLUS

CN Thymidine, 5'-[2-(5-benzoyl-2-nitrophenyl)propyl carbonate] (9CI) (CA
INDEX NAME)

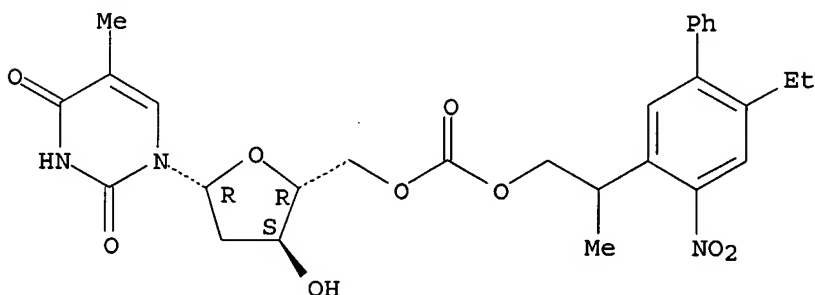
Absolute stereochemistry.



RN 868157-71-5 HCAPLUS

CN Thymidine, 5'-[2-(6-ethyl-4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate]
(9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1146025 HCAPLUS <<LOGINID::20070316>>
DOCUMENT NUMBER: 143:422574
TITLE: Photolabile protecting groups in synthesis of
nucleosides
INVENTOR(S): Stengele, Klaus-Peter
PATENT ASSIGNEE(S): Nimblegen Systems, Inc., USA
SOURCE: Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 1589024 A1 20051026 EP 2005-8191 20050414
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK,
 BA, HR, IS, YU
 DE 102004019098 A1 20051110 DE 2004-102004019098 20040420
 JP 2005306873 A 20051104 JP 2005-122453 20050420
 US 2005272076 A1 20051208 US 2005-109873 20050420
 PRIORITY APPLN. INFO.: DE 2004-102004019098A 20040420
 OTHER SOURCE(S): CASREACT 143:422574; MARPAT 143:422574
 GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

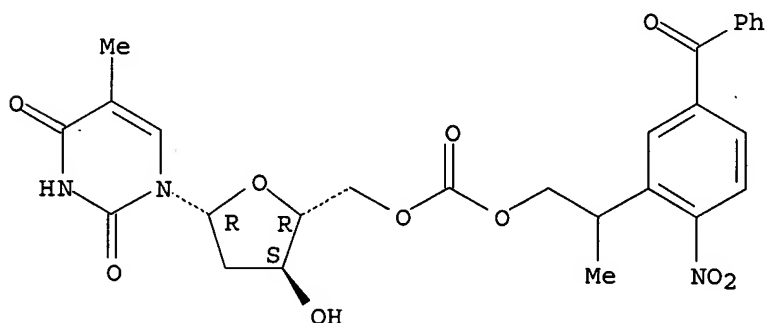
AB Nucleoside derivs. I, wherein R1 = H, halogen, NO2, CN, OCH3, alkyl, alkoxy or alkoxyalkyl residue having 1 to 4 C atoms, preferably a Me, Et, Pr or Bu residue or an optionally substituted aryl residue or aliphatic acyl residue having 2 to 5 atoms, R2 to R7 = H, NO2, CN, OCH3, a branched or unbranched alkyl, alkoxy or alkoxyalkyl residue having 1 to 5 C atoms or an optionally substituted aryl residue or an aliphatic acyl residue having 2 to 5 atoms, X is the group C = O or C = S, Y = S, O, NR', C(R')2, wherein R' is H, or a branched or unbranched alkyl residue having 1 to 5 C atoms or an optionally substituted aryl residue, Z = SO2, OCO, OCS, SCS, and Q is R or R1, B is nucleobase, R8 is H, OH, halogen, OR', SR', P = H or a protecting group common in nucleotide chemical or a common reactive group for the production of oligonucleotides, were prepared using photolabile protecting groups. Thus, nucleoside II was prepared thioxanthone as protecting group.

IT 748789-44-8 868157-71-5
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (photolabile protecting groups in synthesis of nucleosides)

RN 748789-44-8 HCAPLUS

CN Thymidine, 5'-[2-(5-benzoyl-2-nitrophenyl)propyl carbonate] (9CI) (CA INDEX NAME)

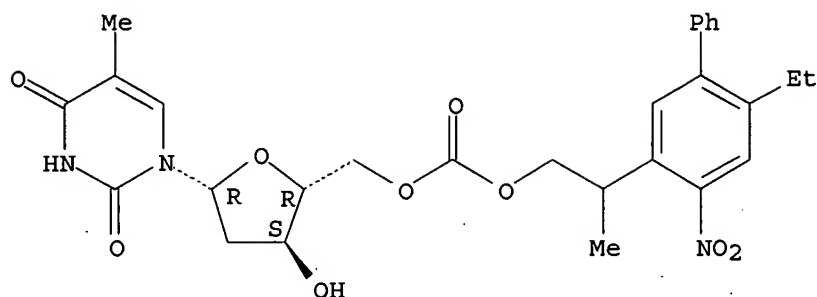
Absolute stereochemistry.



RN 868157-71-5 HCAPLUS

CN Thymidine, 5'-[2-(6-ethyl-4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

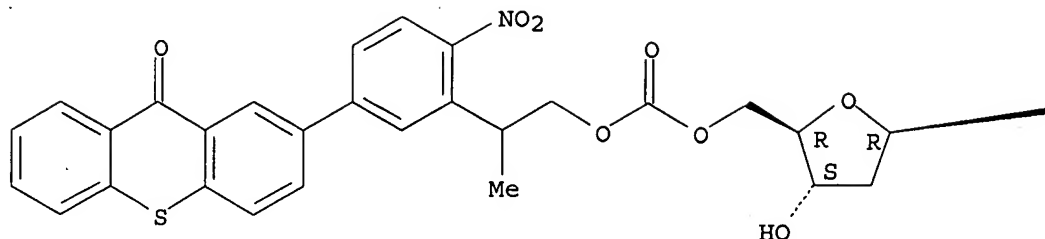


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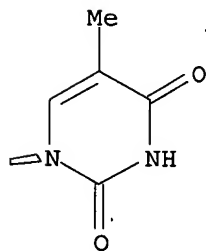
L6 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2005:410525 HCAPLUS <<LOGINID::20070316>>
 DOCUMENT NUMBER: 143:78409
 TITLE: Synthesis of caged nucleosides with photoremovable protecting groups linked to intramolecular antennae
 AUTHOR(S): Smirnova, Joulia; Woell, Dominik; Pfleiderer, Wolfgang; Steiner, Ulrich E.
 CORPORATE SOURCE: Fachbereich Chemie, Universitaet Konstanz, Konstanz, D-78457, Germany
 SOURCE: Helvetica Chimica Acta (2005), 88(4), 891-904
 CODEN: HCACAV; ISSN: 0018-019X
 PUBLISHER: Verlag Helvetica Chimica Acta
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 143:78409
 AB Based on the [2-(2-nitrophenyl)propoxy]carbonyl (nppoc) group, six new photolabile protecting groups, each covalently linked to a 9H-thioxanthen-9-one (Tx) unit functioning as an intramol. triplet sensitizer, were synthesized. Linkers were introduced between the Me group or the aromatic ring of nppoc and the 2-position of Tx by means of classical organic synthesis combined with Pd catalyzed C-C coupling reactions. The new photolabile protecting groups to be used in light-directed synthesis of DNA chips were attached to the 5'-O-atom of thymidine via a carbonate linkage, giving rise to the desired caged nucleosides.
 IT 777864-78-5P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthesis of caged nucleosides with photoremovable protecting groups linked to intramol. antennae)
 RN 777864-78-5 HCAPLUS
 CN Thymidine, 5'-[2-[2-nitro-5-(9-oxo-9H-thioxanthen-2-yl)phenyl]propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



REFERENCE COUNT: 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

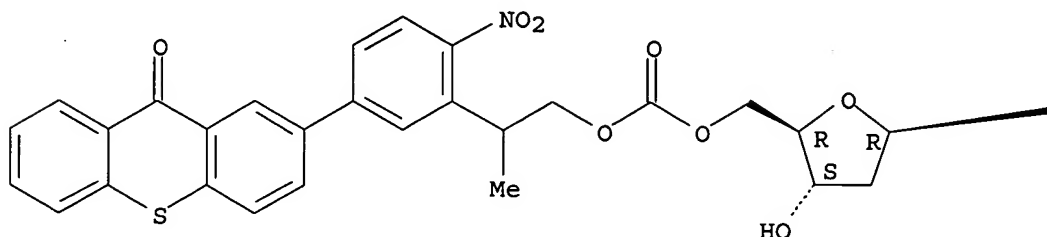
L6 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2004:872740 HCAPLUS <<LOGINID::20070316>>
 DOCUMENT NUMBER: 141:366034
 TITLE: Efficient photolithographic synthesis of DNA-chips by photosensitization
 INVENTOR(S): Steiner, Ulrich; Woell, Dominik
 PATENT ASSIGNEE(S): Universitaet Konstanz, Germany
 SOURCE: PCT Int. Appl., 66 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004089529	A1	20041021	WO 2004-EP2361	20040308
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10315772	A1	20041104	DE 2003-10315772	20030407
PRIORITY APPLN. INFO.:			DE 2003-10315772	A 20030407
OTHER SOURCE(S):		MARPAT 141:366034		

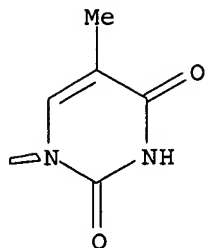
- AB The present invention relates to a new chemical compound, as well as to a method of cleaving labile functional groups from mols. by electromagnetic radiation and a method of manufacturing DNA chips by spatially addressed, light controlled nucleotide synthesis on solid substrates. This invention provides a chemical compound which comprises the structural motif S-(LI)a-P-(L2)b-R, wherein S represents a sensitizer synthon, which first excited electronic state is energetically higher than the first excited electronic state of the labile functional group P (also termed as "protecting group synthon"). The presence of conjugated 7r-systems or conjugated double bonds is especially preferred. It is important, that the sensitizer synthon comprises at least three conjugated double bonds. After excitation of the sensitizer synthon by irradiation of suitable wavelength, the sensitizer synthon changes via intersystem crossing (ISC) from an excited singlet state in the triplet system and relaxes in the lowest excited triplet state. It is understood, that the same applies for every other protecting group synthon, like benzophenone or thioxanthone derivs. The energy of the triplet state is transferred via triplet triplet energy transfer to the protecting group synthon, where by the sensitizer synthon and the protecting group synthon are linked by a bridge. After transfer of the energy to the protecting group synthon, the cleavage of the bond between the substrate and the photolabile protecting group (location C) occurs, so that the substrate can be used selectively for further reactions. Conditions and kinetics of triplet sensitization as a method for increasing the light sensitivity of photolabile protecting groups used for the photolithog. synthesis of oligonucleotide microarrays were quant. studied with the photolabile 2-(2-nitrophenyl)propyl protecting group in homogeneous solns. and on glass substrates by using laser flash photolysis, continuous illumination with HPLC anal., fluorescence dye labeling, and hybridization. It was further demonstrated that, with 9H-thioxanthen-9-one as a sensitizer, high-d. oligonucleotide microarrays of high quality can be produced with one-third of the normal exposure time.
- IT 777864-78-5P, 5'-O'-[2-[5-(9-Oxo-9H-thioxanthen-2-yl)-2-nitrophenyl]propoxycarbonyl]thymidine
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (photolithog. synthesis of DNA-chips by photosensitization)
- RN 777864-78-5 HCAPLUS
- CN Thymidine, 5'-[2-[2-nitro-5-(9-oxo-9H-thioxanthen-2-yl)phenyl]propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



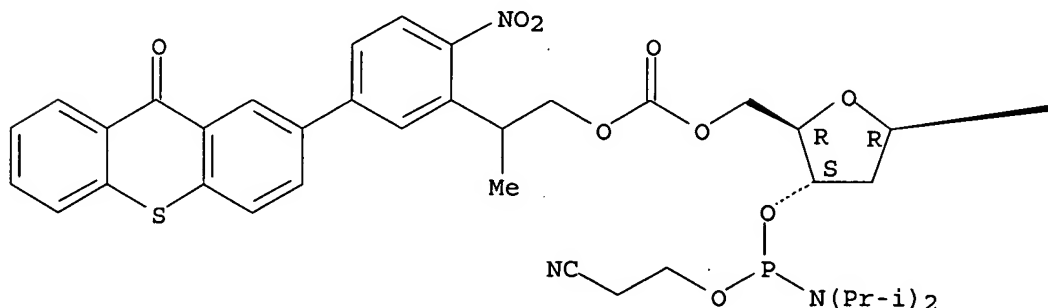
PAGE 1-B



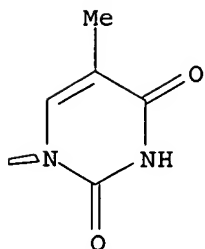
IT 777864-79-6P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (photolithog. synthesis of DNA-chips by photosensitization)
 RN 777864-79-6 HCAPLUS
 CN Thymidine, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite]
 5'-[2-[2-nitro-5-(9-oxo-9H-thioxanthen-2-yl)phenyl]propyl carbonate] (9CI)
 (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



PAGE 1-B



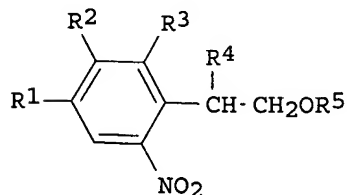
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6. ANSWER 6 OF 7 · HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2004:718549 HCAPLUS <<LOGINID::20070316>>
 DOCUMENT NUMBER: 141:225775
 TITLE: Novel photolabile protective groups for improved processes to prepare oligonucleotide arrays

INVENTOR(S): Buehler, Sigrid; Ott, Markus; Pfleiderer, Wolfgang
 PATENT ASSIGNEE(S): Nigu Chemie G.m.b.H., Germany
 SOURCE: PCT Int. Appl., 67 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004074300	A2	20040902	WO 2004-EP50158	20040219
WO 2004074300	A3	20041229		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004175741	A1	20040909	US 2004-764989	20040126
GB 2414237	A	20051123	GB 2005-17834	20040219
PRIORITY APPLN. INFO.:			US 2003-449070P	P 20030221
			US 2004-764989	A 20040126
			WO 2004-EP50158	W 20040219

OTHER SOURCE(S): CASREACT 141:225775; MARPAT 141:225775
 GI



AB The present invention discloses novel and improved nucleosidic and nucleotidic compds. I, wherein R1 is COOY, wherein Y is alkyl under the proviso that R2 is H, NO2, CN, OCH3, halogen, alkyl, alkoxyl; or R1 is H, NO2, CN, OCH3, halogen, alkyl, alkoxyl, under the proviso that R2 is aryl, heteroaryl, aroyl; R3 is H, NO2, halogen; R4 is H, OCH3, alkyl; R5 is H, C(:X)Z; X is oxygen, sulfur; Z is leaving group, O-atom of a hydroxy group, or a N-atom of an amino group, of a compound comprising the photolabile protective group, that are useful in the light-directed synthesis of oligonucleotides, as well as, methods and reagents for their preparation. These compds. are characterized by novel photolabile protective groups that are attached to either the 5'- or the 3'- hydroxyl group of a nucleoside moiety. The photolabile protective group is comprised of a 2-(2-nitrophenyl)-ethoxycarbonyl skeleton with at least one substituent on the aromatic ring that is either an aryl, an aroyl, a heteroaryl or an alkoxycarbonyl group. The present invention includes the use of the aforementioned compds. in light-directed oligonucleotide synthesis, the resp. assembly of nucleic acid micro-arrays and their application. Thus, N6-benzoyl-5'-O-[2-(5-benzoyl-2-nitrophenyl)-1-propyloxycarbonyl]-2'-deoxyadenosine-3'-O-(3-cyanoethoxy-N,N-diisopropyl)phosphoramidite was prepared using 2-(2-nitrophenyl)-ethoxycarbonyl protective groups.

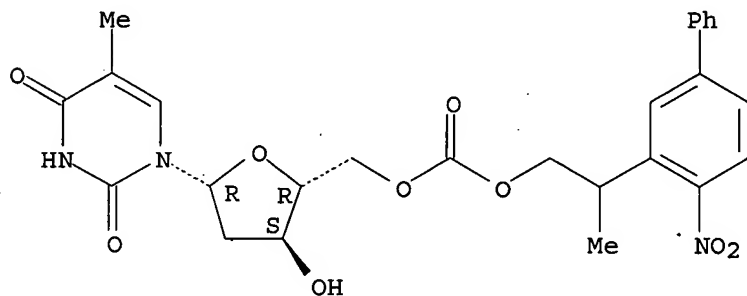
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 748789-32-4P 748789-33-5P 748789-34-6P

748789-35-7P 748789-42-6P 748789-43-7P
748789-44-8P 748789-46-0P 748789-47-1P
748789-48-2P

RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(2-(2-nitrophenyl)-ethoxycarbonyl novel photolabile protective groups for improved processes to prepare oligonucleotide arrays).

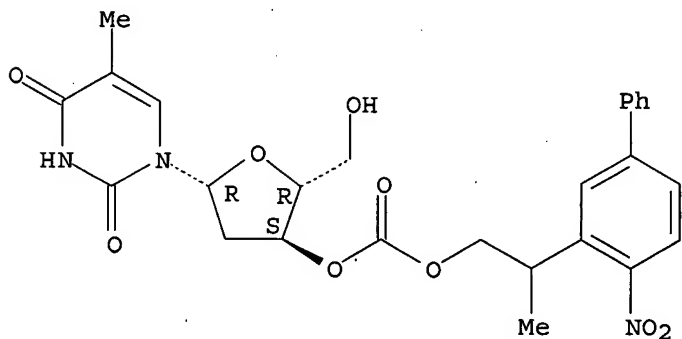
RN 702643-76-3 HCAPLUS
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Absolute stereochemistry.

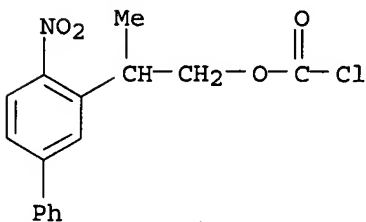


RN 702644-26-6 HCAPLUS
CN Thymidine, 3'-[2-(4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



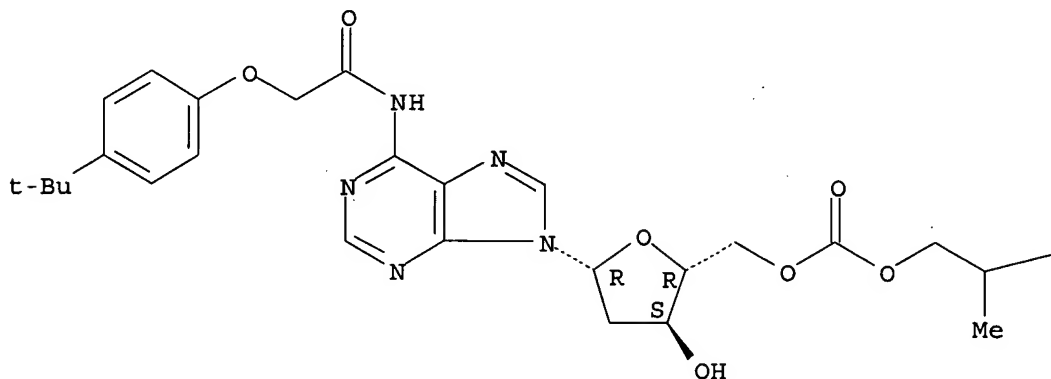
RN 748789-29-9 HCAPLUS
CN Carbonochloridic acid, 2-(4-nitro[1,1'-biphenyl]-3-yl)propyl ester (9CI) (CA INDEX NAME)



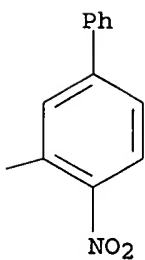
RN 748789-32-4 HCAPLUS
CN Adenosine, 2'-deoxy-N-[[4-(1,1-dimethylethyl)phenoxy]acetyl]-,
5'-[2-(4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX
NAME)

Absolute stereochemistry.

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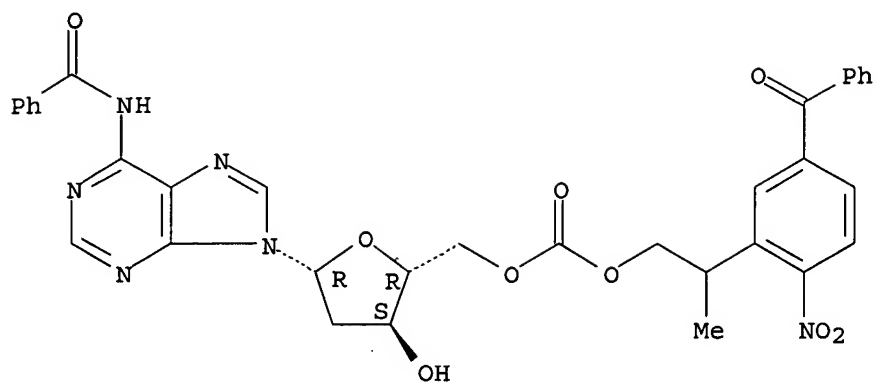


PAGE 1-B



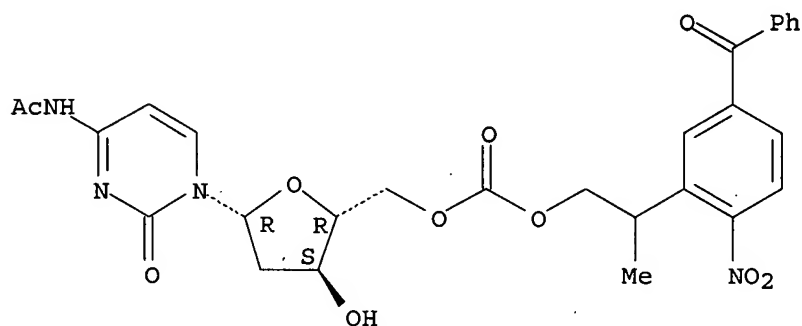
RN 748789-33-5 HCAPLUS
CN Adenosine, N-benzoyl-2'-deoxy-, 5'-[2-(5-benzoyl-2-nitrophenyl)propyl
carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

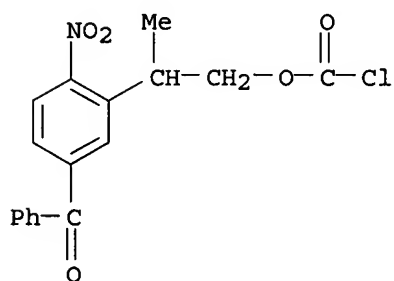


RN 748789-34-6 HCAPLUS
 CN Cytidine, N-acetyl-2'-deoxy-, 5'-[2-(5-benzoyl-2-nitrophenyl)propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



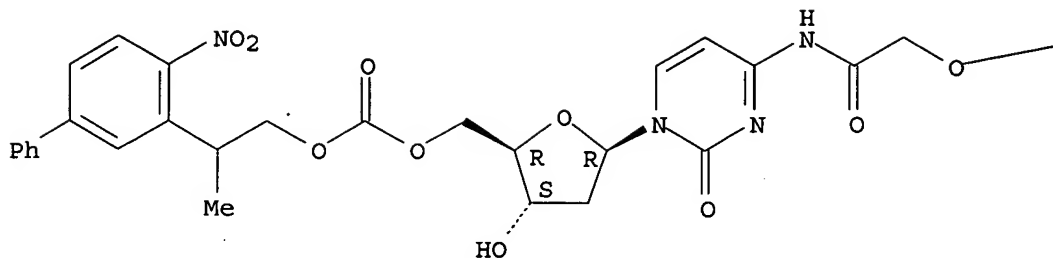
RN 748789-35-7 HCAPLUS
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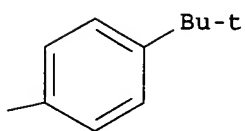
RN 748789-42-6 HCAPLUS
 CN Cytidine, 2'-deoxy-N-[[4-(1,1-dimethylethyl)phenoxy]acetyl]-, 5'-[2-(4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

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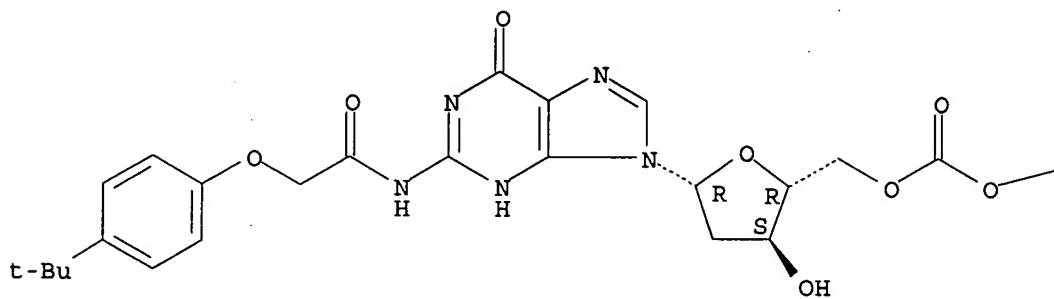
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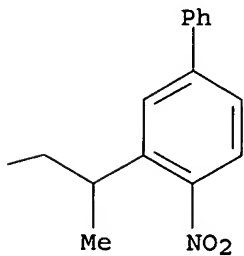
RN 748789-43-7 HCAPLUS
 CN Guanosine, 2'-deoxy-N-[[4-(1,1-dimethylethyl)phenoxy]acetyl]-,
 5'-[2-(4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX
 NAME)

Absolute stereochemistry.

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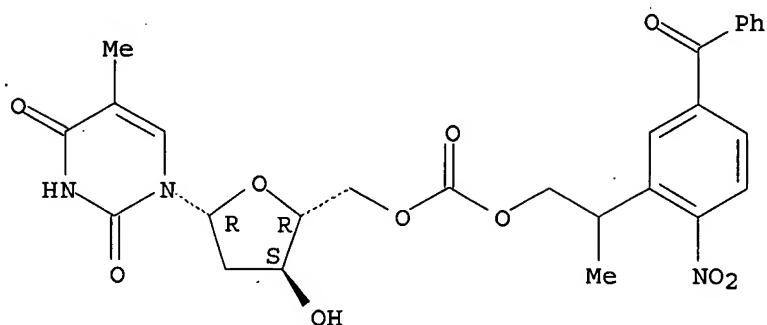
PAGE 1-B



RN 748789-44-8 HCAPLUS

CN Thymidine, 5'-[2-(5-benzoyl-2-nitrophenyl)propyl carbonate] (9CI) (CA INDEX NAME)

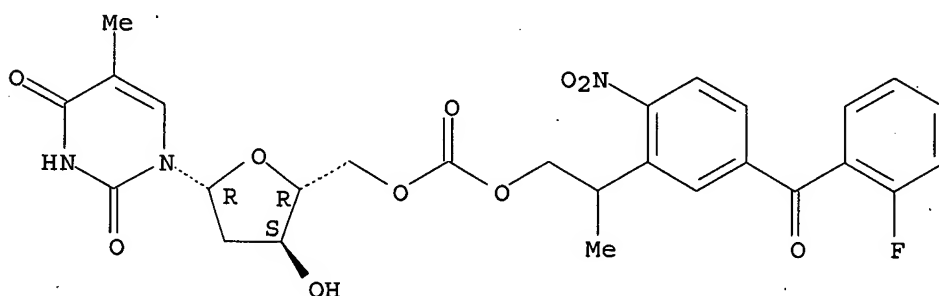
Absolute stereochemistry.



RN 748789-46-0 HCAPLUS

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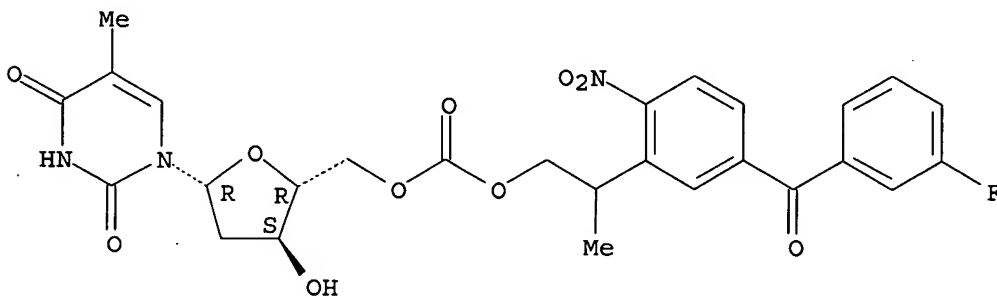
Absolute stereochemistry.



RN 748789-47-1 HCAPLUS

CN Thymidine, 5'-[2-[5-(3-fluorobenzoyl)-2-nitrophenyl]propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

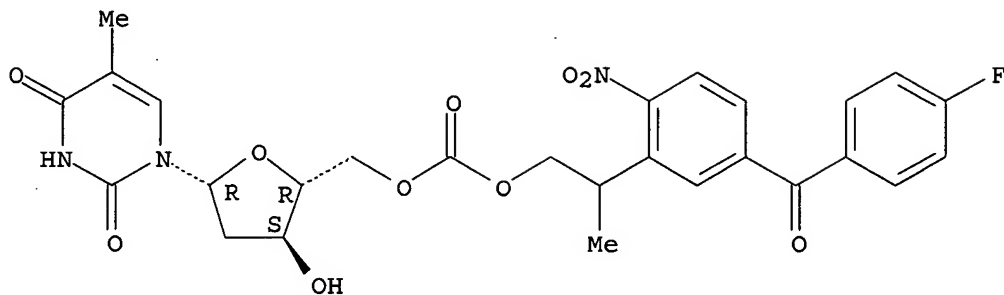


RN 748789-48-2 HCAPLUS

CN Thymidine, 5'-[2-[5-(4-fluorobenzoyl)-2-nitrophenyl]propyl carbonate]

(9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 748789-36-8P 748789-37-9P 748789-39-1P

748789-40-4P 748789-41-5P

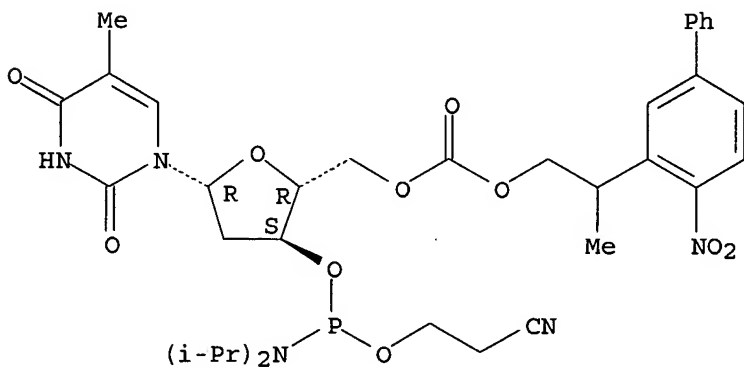
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(2-(2-nitrophenyl)-ethoxycarbonyl novel photolabile protective groups for improved processes to prepare oligonucleotide arrays)

RN 748789-36-8 HCAPLUS

CN Thymidine, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] 5'-[2-(4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

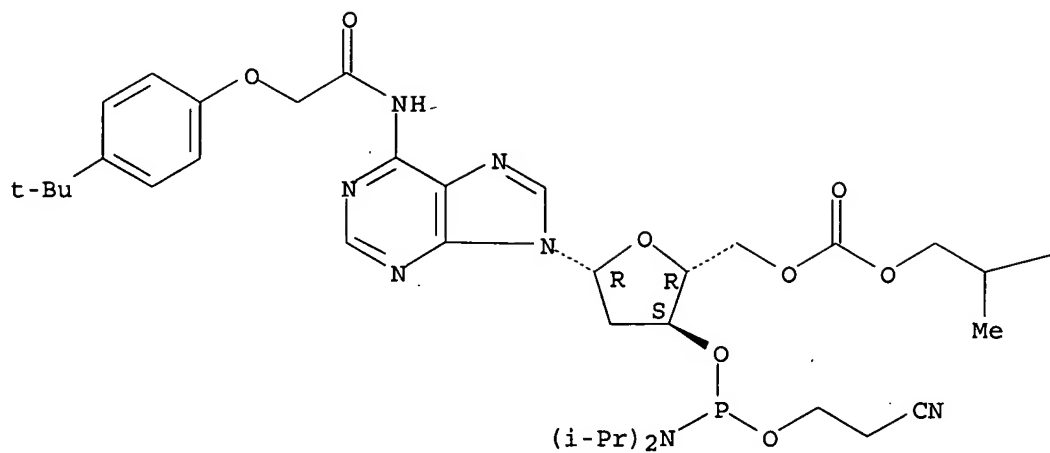


RN 748789-37-9 HCAPLUS

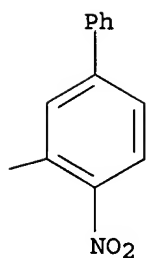
CN Adenosine, 2'-deoxy-N-[[4-(1,1-dimethylethyl)phenoxy]acetyl]-, 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] 5'-[2-(4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

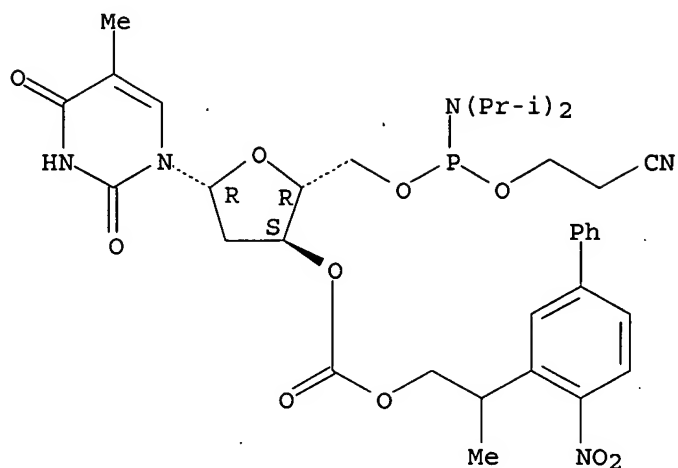


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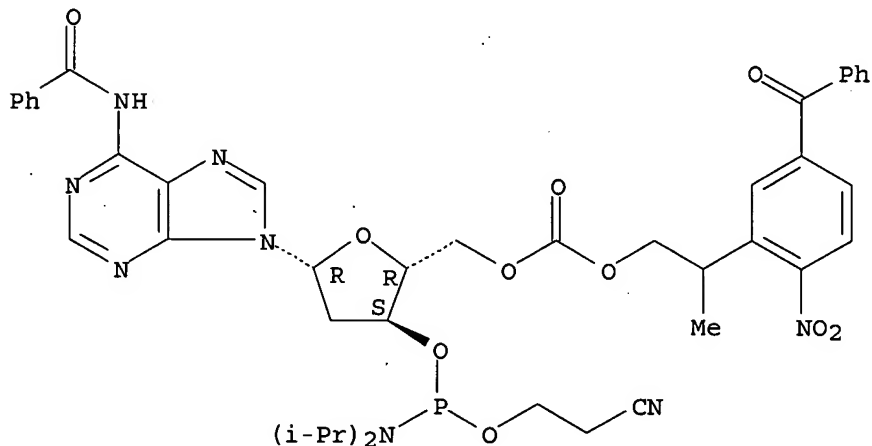
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 CN Thymidine, 5'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite]
 3'-[2-(4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX
 NAME)

Absolute stereochemistry.



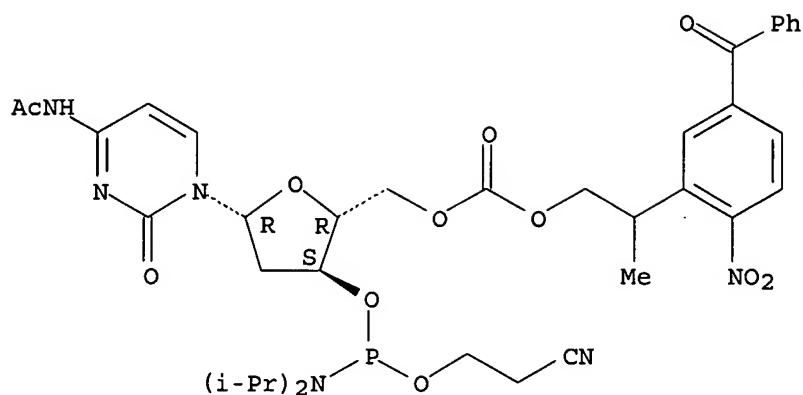
RN 748789-40-4 HCAPLUS
 CN Adenosine, N-benzoyl-2'-deoxy-, 5'-[2-(5-benzoyl-2-nitrophenyl)propyl carbonate] 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 748789-41-5 HCAPLUS
 CN Cytidine, N-acetyl-2'-deoxy-, 5'-[2-(5-benzoyl-2-nitrophenyl)propyl carbonate] 3'-[2-cyanoethyl bis(1-methylethyl)phosphoramidite] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L6 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2007 ACS on STN
 ACCESSION NUMBER: 2004:328520 HCAPLUS <<LOGINID::20070316>>
 DOCUMENT NUMBER: 141:38801
 TITLE: New types of very efficient photolabile protecting groups based upon the [2-(2-nitrophenyl)propoxy]carbonyl (NPPOC) moiety
 AUTHOR(S): Buehler, Sigrid; Lagoja, Irene; Giegrich, Heiner; Stengele, Klaus-Peter; Pfleiderer, Wolfgang
 CORPORATE SOURCE: Chemogenix, Waldkraiburg, D-84478, Germany
 SOURCE: Helvetica Chimica Acta (2004), 87(3), 620-659
 CODEN: HCACAV; ISSN: 0018-019X
 PUBLISHER: Verlag Helvetica Chimica Acta
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 141:38801
 GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Based upon the photolabile [2-(2-nitrophenyl)propoxy]carbonyl group (NPPOC), a large number of modified 2-(2-nitrophenyl)propanol derivs. substituted at the Ph ring, e.g. I, were synthesized to improve the photo-reactivity of this new type of photolabile entity. The Ph moiety was also exchanged by the naphthalenyl group, the thienyl substituent, and the benzo-thienyl substituent, e.g. II. The 2-(2-nitroaryl- and heteroaryl)propanols were converted with diphosgene into the corresponding carbonyl-chloridates, which reacted subsequently with thymidine to the thymidine 5'-(protected carbonates), e.g. III, as the main reaction products. In several cases, the corresponding 3'-carbonates and 3',5'-dicarbonates were also isolated and characterized. Photolysis studies under standardized conditions indicated that the rate of photo-cleavage varies in a broad range depending on the substituents. So far, the thymidine 5'-[2-(5-halo-2-nitrophenyl)propyl carbonates], 5'-[2-(nitro[1,1'-biphenyl]3-yl)propyl carbonates], 5'-[2-(2-nitro-5-(thianthren-1-yl)phenyl)propyl carbonate], 5'-[2-(5-naphthalenyl-2-nitrophenyl)propyl carbonates], and 5'-[2-(2-nitro-5-thienylphenyl)propyl carbonates] showed the best properties regarding fast and uniform deprotection. Since the nucleobases of, e.g. IV, do not influence the photo-cleavage features, in general, the new type of photolabile building blocks allows in form of their 3'-phosphoramidites the photo-lithog. formation of high-quality bio-chips.

IT 702643-76-3P 702643-77-4P 702643-78-5P

702643-79-6P 702643-80-9P 702643-81-0P

702643-82-1P

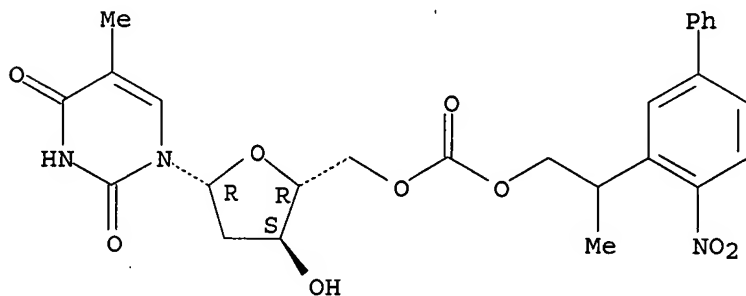
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(efficient photolabile protecting groups based upon the [2-(2-nitrophenyl)propoxy]carbonyl (NPPOC) moiety in preparation of nucleosides)

RN 702643-76-3 HCAPLUS

CN Thymidine, 5'-[2-(4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX NAME)

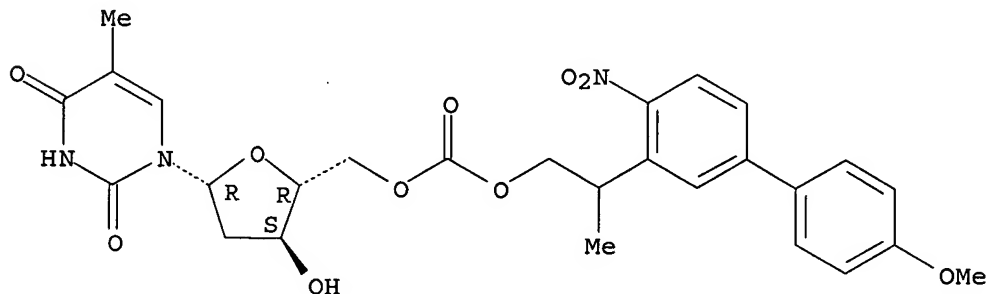
Absolute stereochemistry.



RN 702643-77-4 HCAPLUS

CN Thymidine, 5'-[2-(4'-methoxy-4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX NAME)

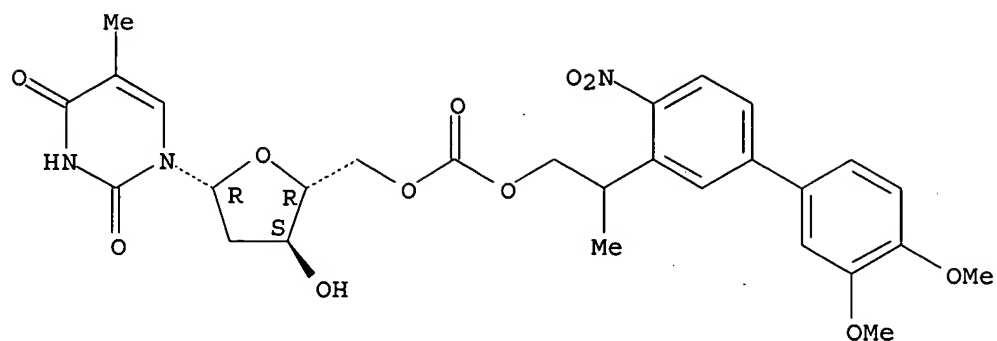
Absolute stereochemistry.



RN 702643-78-5 HCAPLUS

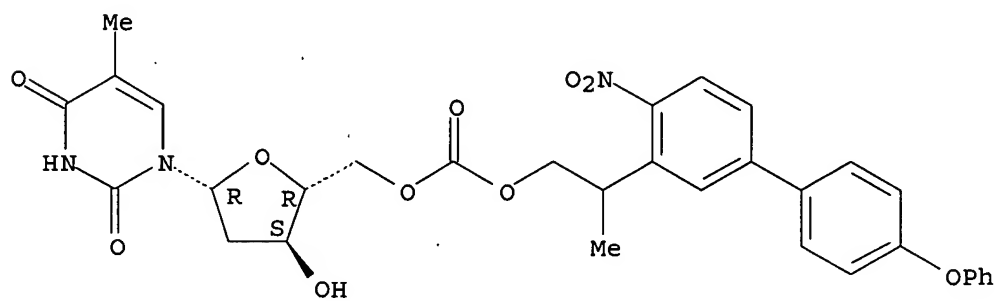
CN Thymidine, 5'-[2-(3',4'-dimethoxy-4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



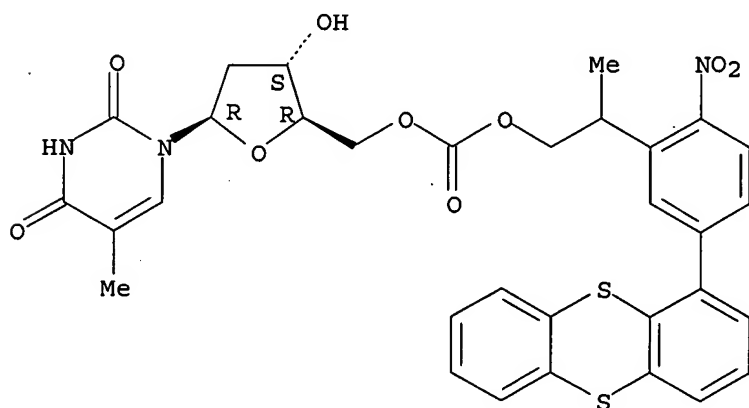
RN 702643-79-6 HCAPLUS
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Absolute stereochemistry.



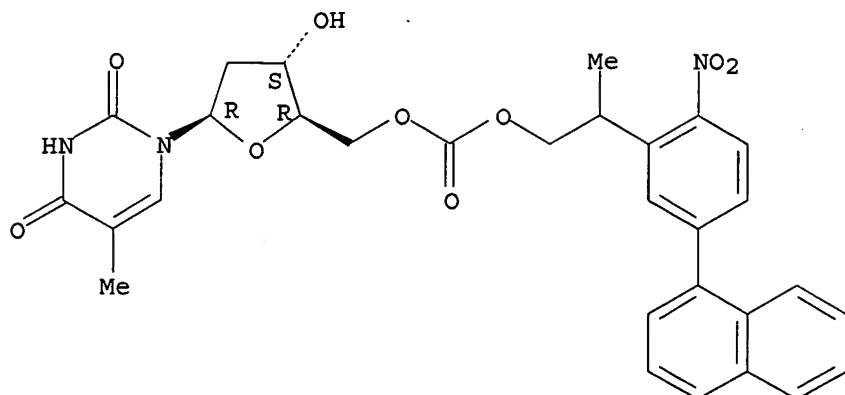
RN 702643-80-9 HCAPLUS
CN Thymidine, 5'-[2-[2-nitro-5-(1-thianthrenyl)phenyl]propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 702643-81-0 HCAPLUS
CN Thymidine, 5'-[2-[5-(1-naphthalenyl)-2-nitrophenyl]propyl carbonate] (9CI) (CA INDEX NAME)

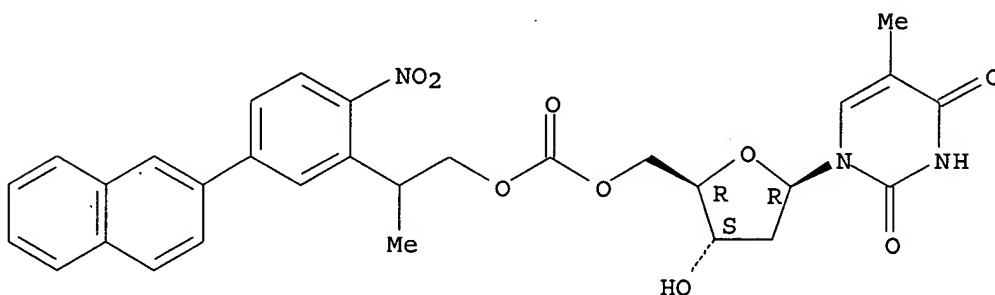
Absolute stereochemistry.



RN 702643-82-1 HCAPLUS

CN Thymidine, 5'-[2-[5-(2-naphthalenyl)-2-nitrophenyl]propyl carbonate] (9CI)
(CA INDEX NAME)

Absolute stereochemistry.



IT 702644-26-6P 702644-27-7P 702644-28-8P

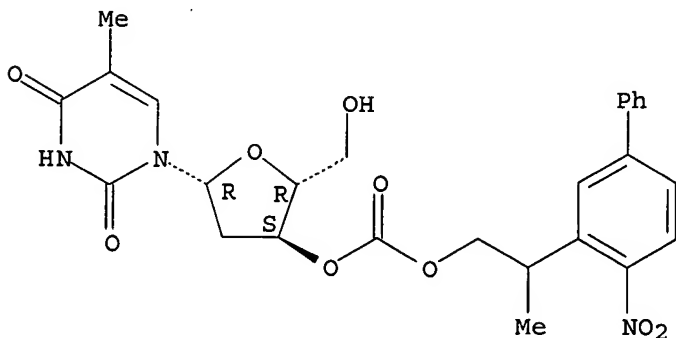
702644-29-9P 702644-30-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(efficient photolabile protecting groups based upon the
[2-(2-nitrophenyl)propoxy]carbonyl (NPPOC) moiety in preparation of
nucleosides)

RN 702644-26-6 HCAPLUS

CN Thymidine, 3'-[2-(4-nitro[1,1'-biphenyl]-3-yl)propyl carbonate] (9CI) (CA
INDEX NAME)

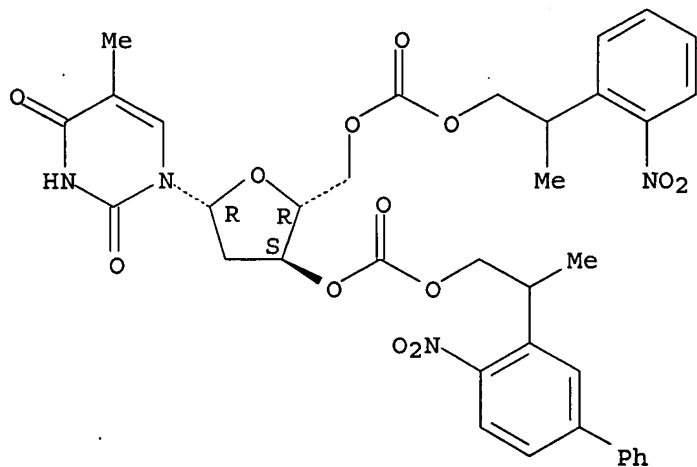
Absolute stereochemistry.



RN 702644-27-7 HCAPLUS

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5'-[2-(2-nitrophenyl)propyl carbonate] (9CI) (CA INDEX NAME)

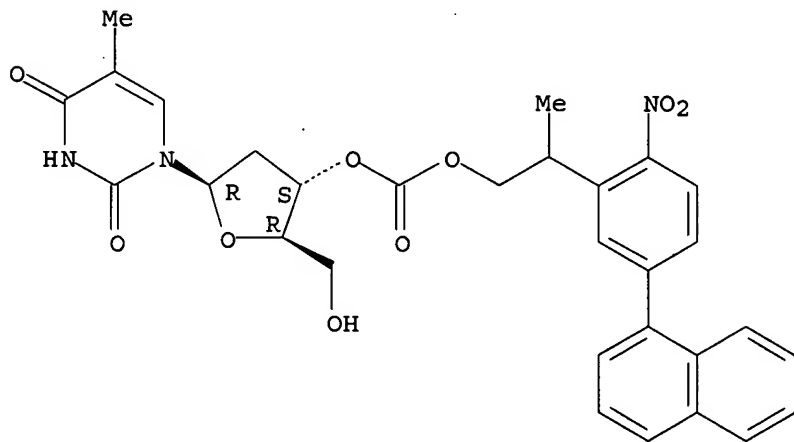
Absolute stereochemistry.



RN 702644-28-8 HCAPLUS

CN Thymidine, 3'-[2-[5-(1-naphthalenyl)-2-nitrophenyl]propyl carbonate] (9CI)
(CA INDEX NAME)

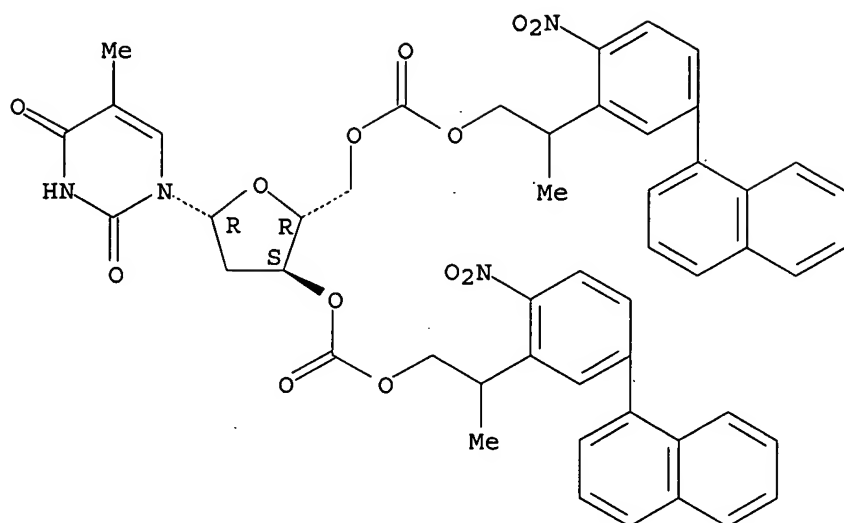
Absolute stereochemistry.



RN 702644-29-9 HCAPLUS

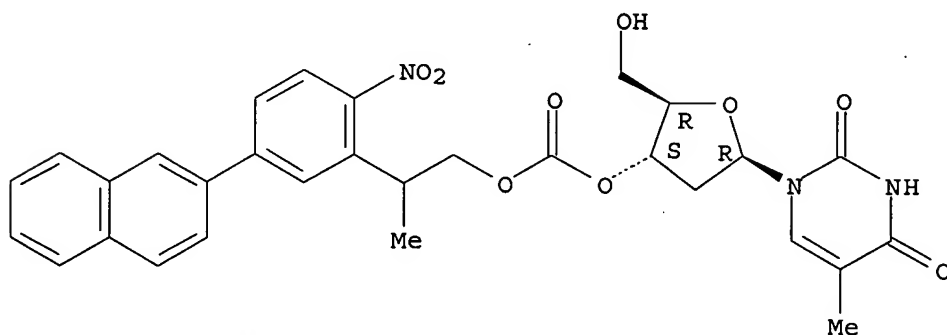
CN Thymidine, 3',5'-bis[2-[5-(1-naphthalenyl)-2-nitrophenyl]propyl carbonate] (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 702644-30-2 HCAPLUS
 CN Thymidine, 3'-[2-[5-(2-naphthalenyl)-2-nitrophenyl]propyl carbonate] (9CI)
 (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 82 THERE ARE 82 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT